

Am ndm nts t th Claims

1. (currently amended) A computerized method of identifying potentially fraudulent healthcare reimbursement claims, ~~the method~~ comprising:

5 determining a sequence of healthcare states for a client from healthcare reimbursement claims associated with the client and storing said sequence in any of:

a data structure in a system database; and

in working memory, and

wherein previously stored associated healthcare states are listed in

10 chronological order for each client, and wherein each state is accompanied by an identification of any of a provider and a facility responsible for said each state, start and end date, and other relevant information as necessary for computation of a transition sequence used in calculating a transition metric for each transition between states;

determining calculating a probability of the sequence based on previously

15 determined calculated probabilities of individual ones of the healthcare states; and

identifying the sequence as potentially fraudulent as a function of the probability of the sequence.

2. (previously amended) The computerized method of claim 1, further comprising:

20 processing healthcare reimbursement claims for a population of clients and healthcare providers for a selected time interval to identify a total set of potential healthcare states; and

for each healthcare state, determining a probability of the healthcare state as a function of the frequency of the healthcare state in the reimbursement claims.

3. (original) A method for identifying potentially fraudulent or abusive treatment practices by healthcare providers, comprising:

processing healthcare reimbursement claims for treatments provided by the
5 providers, to determine transition probabilities for sequences of healthcare states for the treatments;

for each provider, determining an aggregated transition probability for all sequences of healthcare states for treatments provided by the provider; and

10 identifying as potentially fraudulent at least one provider having aggregated transition probability that is statistically different from the aggregate transition probabilities of similar providers.

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4. (previously amended) The method of claim 3, wherein determining an aggregated transition probability for all sequences of healthcare states for treatment provided by the
15 provider comprises:

for each client treated by a provider, determining a transition probability for each sequence of healthcare states including at least one treatment provided by the provider the client; and

determining the aggregated transition probability for the provider as a function of
20 the transition probabilities determined for each sequence of each client.

5. (original) The method of claim 4, wherein:

for each pair of states, there is a transition probability for a transition between the states; and

th transition probability for a sequence of states is the geometric mean of the transition probabilities between each state and the next state in the sequence.

6. (Canceled)

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7. (currently amended) The method of Claim 4 3, wherein processing healthcare reimbursement claims for treatments provided by the providers, further comprises:

for each client in a population of clients, determining a transition probability for each sequence of healthcare states experienced by the client.

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8. (original) A method for creating a model of healthcare states, comprising:

receiving healthcare reimbursement claims from a plurality of healthcare providers, each reimbursement claim related to a client and healthcare treatment;

for each client:

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extracting from the claims related to the client a plurality of treatments;

determining at least one sequence of healthcare states from the treatments, each state associated with a provider;

for each pair of states in each sequence, updating a frequency count of a transition from a first state to a next state;

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for each state, determining a total count of transitions from the state to all other states based on the frequency counts;

for each state transition from a first state to a next state, determining a transition probability for the state transition as the ratio of the frequency count from the first state to the next state, to total count of transition for the first state to all other states; and

after all transition probabilities are determined for each state transition, creating a look-up transition probability table that contains all state transition probabilities for subsequent transition probability in said model.

- 5 9. (currently amended) A method of profiling healthcare entities, the method comprising:

determining at least one sequence of healthcare states for an from healthcare reimbursement claims associated with the an entity;

- B1 10 determining a transition probability of each sequence based on previously determined transition probabilities of individual ones of the healthcare states; and

assigning to a profile of the entity a transition metric based on the transition probability of each sequence.

10. (previously amended) The method of any of one of claims 1, 3, 8, or 9, wherein the
15 healthcare states are facilities providing procedures to clients.

11. (previously amended) The method of any of one of claims 1, 3, 8, or 9, wherein the healthcare states are services codes for healthcare procedures.

- 20 12. (previously amended) The method of any of one of claims 1, 3, 8, or 9, wherein the healthcare states are the healthcare providers.

13. (previously amended) The method of any of one of claims 1, 3, 8, or 9, wherein the healthcare states are provider-days.

14. (previously amended) The method of any of one of claims 1, 3, 8, or 9, wherein the healthcare states are provider-service codes.

5 15. (currently amended) A system for creating models of healthcare claims, comprising:

a database of healthcare claims, each claim including identification of a client, a provider, at least one procedure, and a date;

10 a data processing module that processes a set of the claims into a date-ordered, entity specific sequences of states;

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a transition processing module that determines, from the date ordered entity specific sequences, a transition metric for each transition between states; and

an entity profiling module that generates profiles for at least one entity, a transition metric for one or more sequences of states related to the entity.

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16. (original) The system of claim 15, further comprising:

an analytical module that receives the profiles and identifies entities that are potentially fraudulent or abusive based at least in part upon the transition metrics contained in the profiles.

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17. (original) The system of claim 16, wherein the analytical module includes a predictive model.

18. (original) Th system of claim 16, wherein the analytical module includes a rules based model.

B1 19. (original) The system of claim 15, wherein an entity is one of the group consisting

5 of:

a client;

a healthcare provider;

a provider/client; or

a procedure.

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